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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,399	08/02/2006	Hans-Peter Borufka	011235.57084US	2742

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EXAMINER

EDGAR, RICHARD A

ART UNIT	PAPER NUMBER
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3745

MAIL DATE	DELIVERY MODE
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05/22/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/560,399

Applicant(s)

BORUFKA ET AL.

Examiner

Richard Edgar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 25 April 2007 have been fully considered but they are not persuasive.

Generally, Applicant believes the claims are patentable because the combination of references, at best, show only one rotor with variably spaced blades in said rotor, and therefore not at least two rotors, each having variably spaced blades.

In the previous Office action, the examiner stated on page 5 that "it would have been obvious at the time the invention was made to a person having ordinary skill in the art to apply the single rotor teaching of Caruso et al. to each rotor, as shown by Aini et al. for the purpose of reducing vibration at each rotor stage." Applicant's arguments do not appear to be responsive to this rejection, but rather, Applicant has argued each reference individually.

Applicant's second argument for patentability is generally that the examiner in the international application found the scope allowable, so the U.S. examiner should likewise find the scope allowable. This argument is unpersuasive.

35 USC 371 applications are examined by U.S. Patent Examiners.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 3,006,603 (Caruso et al. hereinafter) in view of European Patent Application EP 921 274 A2 (El-Aini et al. hereinafter).

Caruso et al. teach a turbomachine having blades (see col. 7, line 72 through col. 8, line 11) arranged in accordance with a frequency modulation theory whereby the pitch of the blades varies continuously in the circumferential direction (see col. 3, lines 24-27). Caruso et al. teach a modulation frequency of 1 and thereby not necessarily a balanced rotor.

El-Aini et al. teach a turbomachinery rotor 34 with blades 36 arranged to tune out vibrations by arranging the blades 36 at specific pitches 42 based on the application at hand (see col. 5, lines 2-4). The rotor in one embodiment is an integrally bladed rotor (see paragraphs 12 and 21). El-Aini et al. also teach to make rotor haves symmetric for the purpose of balancing the rotor (see paragraph 20). El-Aini et al. show a gas turbine engine comprises a fan rotor 12, 14, a compressor rotor 16 and a turbine rotor 20, 22 in an aircraft engine (see nozzle 26). FIG. 1 shows multiple fan rotors 12, 14 and compressor rotors 16 axially arranged in series.

Since Caruso et al. teach a turbomachinery rotor with blades arranged in a continuously decreasing/increasing pitch around the circumference for reducing

vibrations, and El-Aini et al. teach a rotor with varied blade pitches based on the application, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify Caruso et al. to be a rotor for an aircraft engine in either the fan, compressor or turbine section, whereby rotor halves are symmetric with respect to the blade pitches, for the purpose of balancing the rotor. Furthermore, since Aini et al. show that the fan and compressor section have axially arranged rotors, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to apply the single rotor teaching of Caruso et al. to each rotor, as shown by Aini et al., so that every rotor has blades arranged therein differently, for the purpose of reducing vibration at every rotor stage.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

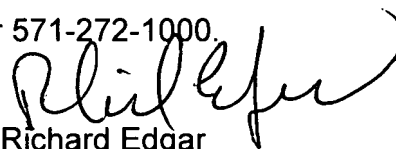
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Edgar whose telephone number is (571) 272-4816. The examiner can normally be reached on Monday thru Friday, 7 am- 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Richard Edgar
Primary Examiner
Art Unit 3745

RE